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of which leaves are the organs, and to consider it as a merely unavoidable evaporation whose amount depends upon physical factors that need to be exactly evaluated. What would be thought of an engineer who attempted to compare the performance of two boilers of different construction if he knew nothing of the heat units applied? Yet most of the so-called "comparative" studies of transpiration take no account of the fundamental energetics involved, assuming that when leaves are placed "under the same conditions" they have a like amount of energy for transpiration!—C. R. B.

**Correlation and leaf size.**—A. J. EWART has published a short note dealing with correlation and leaf size.<sup>28</sup> LINDEMUTH has shown that adult leaves of *Begonia* and *Iresine* increase in size when allowed to root in the soil. EWART conducted experiments on *Tilia europaea*, and found that adult leaves do not increase in size, even when most of the leaves are removed. However, a partial defoliation of young shoots causes a development of unusually large leaves, and the increase in size beyond the normal is due to an increase in the number of cells and not to an increase in their size, as supposed by LINDEMUTH. That increased size is due to an increased number of cells in such cases is not the common view.—H. C. COWLES.

**Presynapsis and synapsis.**—Presynaptic and synaptic stages in the first division of the embryo sac mother cell of *Adoxa* are interpreted by LAGERBERG as follows.<sup>29</sup> Before synapsis the chromatin granules collect into groups which are often in pairs, apparently less numerous than the mature chromosomes. The chromatic substance of the groups becomes distributed along parallel linin threads, so that at the beginning of synapsis there are two parallel threads which fuse as synapsis proceeds. The single thread which is thus formed is the thickest which appears at any time in this nucleus. Accordingly, the fusion of the male and female elements of the nucleus takes place during synapsis.—CHARLES J. CHAMBERLAIN.

**Embryology of Capsella.**—The late Mrs. Mabel Schaffner<sup>30</sup> left an incomplete paper on the embryology of *Capsella*, which her husband, Professor JOHN H. SCHAFFNER, has published. It is a detailed study of the development of the embryo of what is perhaps the most frequently used dicotyledon in teaching. Aside from the completeness of the series, the striking feature of the plates is that the whole series is drawn to the same scale, representing to the eye the actual increase of the embryo in size at each stage of its development.—J. M. C.

<sup>28</sup> EWART, A. J., The influence of correlation upon the size of leaves. *Annals of Botany* 20:79-82. 1906.

<sup>29</sup> LAGERBERG, TORSTEN, Ueber die präsynaptische und synaptische Entwicklung der Kerne in der Embryosackmutterzellen von *Adaxa moschatellina*. *Botaniska Studier*, tillägnade F. R. KJELLMAN. 1906:80-88.

<sup>30</sup> SCHAFFNER, MABEL, The embryology of the shepherd's purse. *Ohio Nat.* 7:1-8. pls. 1-3. 1906.